Course Outline

AUTO 131

Servicing Electrical and Electronic Systems

5 Credit Hours
3 Lecture Hours
6 Lab Hours

The Community College of Baltimore County

Description

Servicing Electrical and Electronic Systems
Introduces various automotive electrical and electronic components, operations, and service procedures; includes service of the battery, starting systems, charging systems, accessories, chassis wiring, and electronic engine controls. $20.00 fee required

Overall Course Objectives

Upon completion of this course the student will be able to:

1. Use wiring diagrams during diagnosis of electrical circuit problems.
2. Obtain and interpret digital multimeter (DMM) readings.
3. Check voltage and voltage drop in electrical/electronic circuits using a digital multimeter (DMM) and determine needed repairs.
4. Check current flow in electrical/electronic circuits and components using an ammeter and determine needed repairs.
5. Find shorts, grounds, opens, and resistance problems in electrical/electronic circuits and determine needed repairs.
6. Inspect and test power and ground circuits and connections to determine service or replacement as needed.
7. Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits to determine repair or replacement as needed.
8. Perform battery state-of-charge test and determine needed service.
9. Perform battery capacity (load, high-rate discharge) test and determine needed service.
10. Diagnose incorrect horn operation and repair as needed.
11. All other NATAF Tasks from the master course list.

Major Topics

1. Battery/Starter Diagnosis and Service
2. Voltage and voltage drop
3. Compare voltage, current, and resistance

4. Ohms law
5. Electricity circuits
6. Integrated circuits testing

In AUTO 131 students are required to demonstrate an ability to solve problems related to automotive diagnosis of electrical circuit using multimeter.

Course Requirements

One Term Paper

1. Topic of the paper will be selected by the student and should relate to the subject material of the course.
2. The paper should be 6 to 8 pages in length, typewritten, and double-spaced. It should include in addition to the 6 to 8 pages of text, an author and title page and bibliography utilizing a minimum of three reference resources excluding classroom materials.
3. All papers are due when 80% of the class sessions are completed. Papers submitted late will be deducted one letter grade.

Grading/Exams:

Grading procedures will be determined by the individual faculty member and will be provided on the first day of class. A student can expect a minimum of eight grades from the following categories:

1. Quizzes
2. Lab projects
3. Written paper
4. Homework assignments
5. Midterm exam
6. Class participation
7. Comprehensive final (required)

Other Course Information

This course is an Automotive Technology core course.